

**CALIFORNIA CONSUMER POWER AND CONSERVATION
FINANCING AUTHORITY**

Energy Resource Investment Plan – 2003-2004



**Stabilizing California's Power Resources
– Investing for Our Energy Security**

Final

June 27, 2003

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INTRODUCTION

The mission of the California Consumer Power and Conservation Financing Authority (CPA) is to help assure an adequate reserve margin for the State through power supply and conservation investments that will result in a reliable supply of electricity, along with just and reasonable rates for the consumer.¹

Important changes in the financial strength of the electric power generating companies have occurred since February 14, 2002, when the California Power Authority (CPA) published its first Energy Resource Investment Plan (Investment Plan). At that time the CPA observed that there was concern as to whether the new power plants needed to supply an adequate reserve would be built. That concern regarding potential lack of supply has moved swiftly to become a reality.

Experience has also made clear that without CPUC approval of long-term contracts for the power generated, the CPA cannot finance or own the necessary power plants. Thus we cannot do our job without the support and approval of the California Public Utilities Commission (CPUC) for the needed projects.

The major companies in the power generating business, almost without exception, are in such financial trouble that they cannot borrow money. Many are ceasing construction on projects already underway and attempting to sell assets to reduce their debt and avoid bankruptcy. No one knows exactly how deficient the California supply situation might have to become before generators and their investment backers will return to the California market, nor how long a lag there will be between renewed interest and new generation resources being available for dispatch.

The current circumstance has underscored the vital importance of the CPA in carrying out its statutory mandate to “ensure sufficient power reserves”. While recognizing the role the CPA can play, we know we cannot accomplish our goals alone. We have worked very closely over the past year with other State energy agencies and organizations to develop consensus views on the actions needed. The CPA has worked diligently and closely with the California Energy Commission (CEC), California Public Utilities Commission (CPUC), and the California Independent System Operator (CAISO) on market monitoring, shared analyses, and development of policies and strategies to strengthen the State and western energy markets and institutional framework. Examples of this close coordination are the joint efforts on the Energy Action Plan, CPA Reserves Rulemaking, CEC Integrated Energy Policy Report, and the CPUC’s proceedings on metering/pricing, power procurement, and distributed generation.

¹ There are five specific legislative goals guiding the mandate given to the California Power Authority in Public Utilities Code Section 3300. Those goals are to:

- Furnish the citizens of California with reliable, affordable electrical power.
- Ensure sufficient power reserves.
- Assure stability and rationality in California’s electricity market.
- Encourage energy efficiency and conservation as well as the use of renewable energy resources.
- Protect public health, welfare and safety.

We recognize that the power supply situation in California has improved in the past two years as new plants have been added, conservation programs have been implemented, and long-term contracts have been put in place. While these actions have helped stabilize the market, we believe the reserve margin is still far short of an adequate level to achieve long-term price stability. If the California economy were to pick up again while the depression in the energy generating business continues, we could be right back where we were two to three years ago. Both the CAISO and Pacific Gas & Electric (PG&E) mirrored these views in April 2003 Congressional testimony in Washington, D.C.

It is imperative that the CPA, in concert with the responsible State agencies, takes timely action so that never again do we face the crisis we faced just two years ago. To this end, we understand that the CPA requires CPUC approval for any new generation, and the associated power purchase contracts, that the CPA may own or finance on behalf of investor-owned utilities (IOUs) and their customers. Without this approval the CPA is not able to issue such financing. Thus we will continue to submit power resource proposals to the IOUs and the CPUC for their consideration and to request their prompt approval.

The CPA has reassessed its original Investment Plan, as well as our energy financing opportunities in current market conditions. For 2003-04, our investment strategies will emphasize:

- Readiness to “step-in” to finance and/or own new power plants that must be built or completed to ensure power reliability or power supply in California, when private companies do not build or cannot finance, and the need for such action is the consensus view of the responsible State agencies.
- Advancing our Demand Reserves Partnership program through revised institutional and contractual arrangements.
- Increasing the contribution of renewable energy resources to the power portfolio through financing and aggregation services to load-serving entities (LSEs) Statewide (investor-owned utilities [IOUs], publicly-owned utilities, and energy service providers).
- Facilitating investments in efficiency and distributed generation on public facilities across the State.

As was the case with the Power Authority’s 2002 Investment Plan, this 2003-2004 Plan is offered with the expectation it is a “living document” that lays out our anticipated investment strategies for the coming years. As a living document, both the Plan’s strategies and the anticipated specific investment activities will be adjusted in response to market circumstances and consultations with sister energy agencies.

The CPA will always retain its focus on ensuring an adequate future reserve of electricity, while seeking to facilitate a greater share of efficiency and renewable energy in meeting California’s energy needs. Moreover, we retain our commitment to developing and implementing cost-effective and environmentally sound solutions that fill gaps in the State’s energy system.

Organization of the 2003-2004 Report

- Section 1 summarizes key changes in the power market and California regulatory arena in the past year.
- Section 2 reviews the CPA's mandate, roles, overall investment strategies, and framework for implementing energy project development and financing.
- Section 3 presents the specific investment strategies the CPA will follow during 2003-2004, along with our anticipated action plans to implement these strategies. Action plans report anticipated projects, financing levels, action milestones, and timeframes.

An Appendix offers more detail on the status and outcomes of the CPA's activities in the past year and a half.

Reader's Note:

It is important to note that the CPA wears two "hats" as a State agency:

- As a State agency created by the Legislature and with a board majority appointed by the Governor, the organization contributes its policy and strategic expertise regarding the State's energy policies and institutional oversight.
- As an energy development and capital financing authority, we seek to develop projects and arrange financing where this is in the public interest.

This Investment Plan is a Statement of the CPA's planned investment strategies and energy development activities for the year ahead. As such, it should not be viewed as a complete "work plan" for the Power Authority. The annual budget of the Power Authority reflects the full work plan for the organization, including our policy and administrative advisory activities.

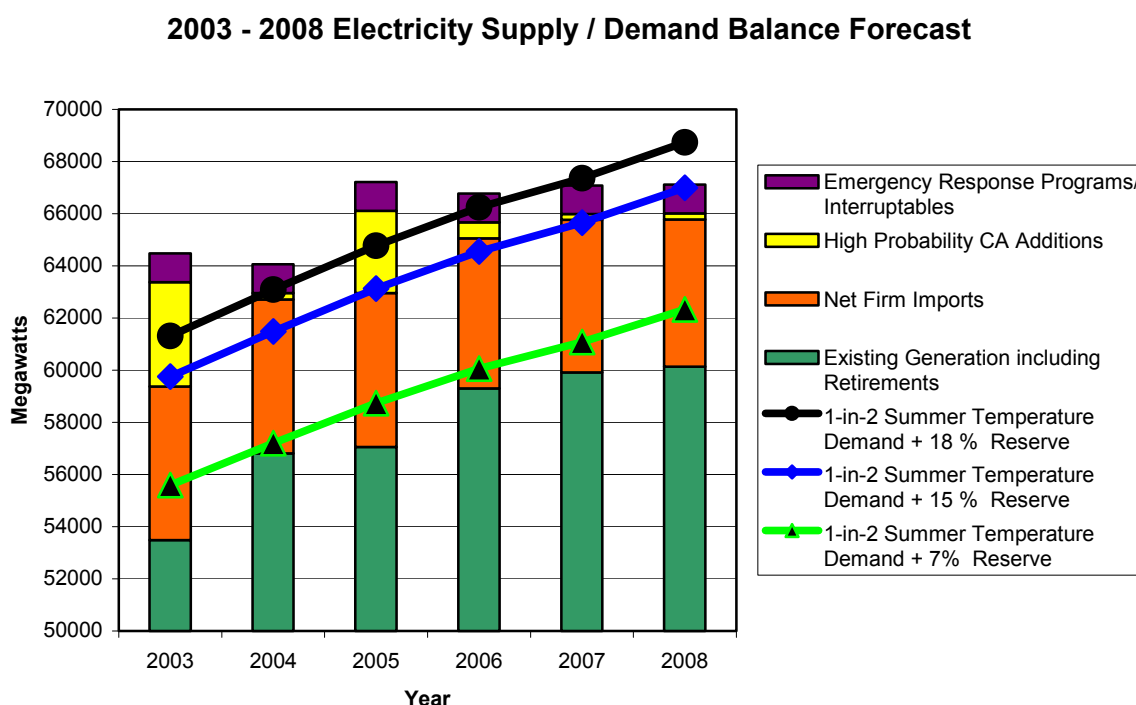
1. What Has Changed In A Year?

The past year has witnessed considerable change and evolution in energy markets, customer demand for power, and institutional oversight activities, all culminating in a unique multi-agency Energy Action Plan with CEC, CPA and the CPUC. These changes form an important foundation for shaping the investment and financing activities of the Power Authority in the coming years.

A. Energy Demand Forecast and Anticipated Supply-Demand Balance

The Power Authority draws upon data and analysis by the California Energy Commission (CEC) to understand the forecast electricity demand and supply balance for 2003-2008. This data and its associated conclusions are displayed in Figure 1-1 (graphic) and Table 1-2 (underlying data).

Figure 1-1



Source: California Energy Commission

Figure 1-1 displays projected growth in electricity demand², assuming normal summers (1 in 2 summer temperatures), for 2003-08. The chart also represents varying types of

² Forecast demand assumes an average (rising) level of consumer demand, with a predicted amount of ongoing energy efficiency resulting from building energy standards, appliance energy efficiency standards, utility efficiency programs, and a “routine level” of consumer/business investments in efficiency. Obviously actual demand is a function of temperature, economic conditions, energy prices, and other factors. With increased attention to demand side options (via promotion, incentives, higher standards, or

supply resources, as explained in more detail in Table 1-2. The chart shows the CEC's assumptions for existing generation committed to California (net of any assumed plant retirements), net firm imports, high probability additions of new generation, and resources that can be called under emergency conditions from interruptible and similar types of customer demand reduction programs. (Note: most of these emergency resources can be called upon only after the grid has fallen below a 7% operating reserve requirement.)

The three parallel diagonal lines represent the varying supply resources needed to meet expected consumer demand at alternate levels of reserves -- from the bare minimum 7% operating reserve that keeps the grid system intact, to reserves of 15-18% called for by the joint agencies' Energy Action Plan. Reserves in this range are necessary both to manage forced and planned outages as well as to ensure competitive power prices for power purchased in the short-term market.

At this high level of review, the figure makes it apparent that new generation additions (or equivalent demand side reductions) are essential to meeting the 15% reserve margin, and that in all but two of the six years the planned resources would be insufficient to achieve an 18% reserve margin.

Table 1-2 permits a closer look at several of the components of the CEC's supply/demand balance assessment. It is noteworthy that even with the current economy, load growth is forecast to range from 1000 – 1500 MW per year, equivalent to completing two to three new baseload power plants each year. The dramatic level of conservation achieved in the summer of 2001 has abated. While efficiency programs are ongoing, 2002 energy sales and market research data suggest that at best half to two-thirds of the 2001 conservation effects may persist. If the current economy recovers faster, growth will push demand growth and power requirements yet higher. In addition, some 1600 MW of older plants are expected to retire between 2004-2006, equivalent to an additional three power plants that must be replaced.

We focus the CPA's review on the factors that affect reserve levels:

- existing generation assumed to be available,
- high probability generation additions within California, and
- the ability to meet 15 and 18% planning reserve margins.

Existing generation assumed to be available

The existing generation data contained in Table 1-2 are based on several key CEC assumptions, some of which warrant further consideration:

- The first is that all of the resources located in California will be available for sale for use within California when demand occurs. However, we know that thousands of megawatts of generation resources physically located in California are not

time-of-day energy prices), the demand forecast could be lowered.

under contract, and are not committed to in-State use. Some is already contracted for out-of-State use. To assume that all power plants in California that are not under contract will be available for in-State use during peak hours ignores the very real risk that these facilities may not be available when needed.

Table 1-2
CEC Planning Scenarios for Electricity Demand, Resources, and Planning Reserves

2003-2008 Statewide Supply / Demand Balance						
	Aug-03	Aug 2004	Aug 2005	Aug 2006	Aug 2007	Aug 2008
Existing Generation	54,715	57,523	57,061	60,219	59,917	60,135
Retirements	-1,234	-708	0	-916	0	0
Existing Generation Net of Retirements	53,481	56,815	57,061	59,303	59,917	60,135
Net Firm Imports	5,895	5,895	5,895	5,748	5,848	5,648
High Probability CA Additions	4,042	246	3,158	614	218	229
Total Supply (MW)	63,418	62,956	66,114	65,665	65,983	66,012
Demand (revised Mar 2003):						
1-in-2 Summer Temperature Demand (Normal)	51,956	53,464	54,893	56,135	57,089	58,256
Planning Reserve (1-in-2 Summer)	22.0%	17.7%	20.4%	16.9%	15.5%	13.2%
1-in 10 Summer Temperature Demand (Hot)	55,113	56,712	58,229	59,548	60,560	61,798
Planning Reserve (1-in-10 Summer)	15.9%	11.6%	14.3%	10.8%	9.4%	7.2%
1-in-2 Summer Temperature Demand + 7% Reserve	55,593	57,206	58,736	60,064	61,085	62,334
Surplus (MW)	7,785	5,710	7,338	5,561	4,858	3,638
1-in-2 Summer Temperature Demand + 15 % Reserve	59,750	61,484	63,127	64,555	65,652	66,994
Surplus/Deficit (MW)	3,628	1,432	2,947	1,070	291	-1,022
1-in-2 Summer Temperature Demand + 18 % Reserve	61,308	63,088	64,774	66,239	67,365	68,742
Surplus/Deficit (MW)	2,070	-172	1,300	-614	-1,422	-2,770
Notes:						
Net firm imports and forced and planned outages estimates are based on 2003 estimate. No new firm imports are assumed so contract expirations reduce net firm imports over time with exception of 2007 where 100MW export contract expires. This causes						
Net Firm Imports to increase 100MW in 2007.						
Planned resources do not include emergency response options (e.g. interruptible loads activated at Stage 1 or higher), forced and						
planned outages, or spot market imports. Such resources become additions to or subtractions from planned resources						
to achieve actual supply available to meet actual demand in real-time.						
Source: California Energy Commission						

- Second, plant retirements will be moderate over the period 2003-2008. However, the CEC's projections of plant retirements do not reflect the age of California's fossil-fuel generation units, and the uneconomic investments that would be required to bring older plants into compliance with environmental emissions regulations. There is a very real risk that retirements will exceed the projected values.
- Third, transmission capacity will be adequate to deliver scheduled energy. However, CAISO analysis suggests that even if resources are available in-State, there are still some transmission constraints that prevent power delivery to load centers.

High probability generation additions within California

There is considerable uncertainty regarding planned new generation remaining on-schedule for their target commercial operation dates. (See further discussion below on the market and the availability of capital to finance generation projects.) The Table 1-2 data reflect an assumption that the following plants will be completed and available to serve California load in 2003 and 2005. (Capacities may not exactly match the additional generation data reflected in Table 1-2.)

“High Probability” Plant Additions

2003 Additions (w/ MW capacity)		2005 Additions (w/ MW capacity)	
La Paloma	1124	Mountain View*	1056
High Desert (on-line)	830	Metcalf *	600
Elk Hills	500	Magnolia	328
Blythe	520	Otay Mesa*	510
Huntington Beach	225	Pastoria	750
Valero	51		
Los Esteros	180		
Tracy	169		
Woodland	80		
Sunrise	265		
Sub-total	3944 MW	Sub-total	3244 MW

Source: CEC

* Plants totaling 2100+ MW lack long-term contracts.

Looking at the anticipated 2005 plant additions, it is impossible to truly state that all these are high probability – at least to be in place for Summer 2005. As noted above, plants totaling 2100+ MW do not have long-term contracts, and thus cannot ensure they will be financed and built on this schedule. Should any of these facilities not be completed, not be completed on time, or not secure contracts to schedule their use in California, then both supply resources and the target planning reserve would be further reduced. To avoid such an outcome will require timely proposals for IOU power procurement and prompt approval by the CPUC of long-term contracts to secure these resources.

Meeting reserve margins

Using a 15% planning reserve, it appears critical that the projected new capacity become available in 2003 and 2005 (4042 MW and 3158 MW, respectively, as shown in Table 1-2). Significant new resources will be needed again starting in 2007-08. If we look at a target of 18% reserves, then we need additional resources by summer 2004, and still more starting the summer of 2006.

A hot summer (defined as occurring once every 10 years) adds 6% to demand, twice the resources needed to move from a 15% to an 18% planning reserve. If we were to have such a hot summer, and assuming transmission infrastructure continues to constrain imports from out-of-State, it would be very important to have additional demand response/ dynamic pricing available to California. This price-driven resource can be called upon sooner than the emergency response programs that can only be activated at Stage 1 alerts (when reserve margins fall to 7%) or lower reserve levels.

Meeting these reserve margins also is sensitive to the completion and operation of planned generation additions listed by the CEC as “High Probability.” Should half of the 2003 and 2005 generation additions not be completed, a 15% planning reserve cannot be met in 2005. If just half of the 2005 generation additions are completed, then an 18% planning reserve cannot be met in 2005.

Implications

- **Price stability with target reserves.** Depending upon which summer forecast is chosen as a benchmark, dependable capacity may fall short of target reserve levels. When reserve margins fall substantially below 15%, prices for spot market purchases to meet power requirements will be driven higher. Thus, more energy resources (supply or demand reduction) may be needed to ensure the price of energy remains acceptable.
- **Transmission constraints to access imports.** Reliance on spot market purchases of out-of-State (including Mexico) resources has transmission constraints. The CAISO recently reported that although over 4,300 MW of new generations is expected to be operating outside California’s borders for summer 2003, only 200 MW of that could be available to the State due to transmission capacity constraints.³
- **Expanded commitment to peak resources.** Additional in-State peaking resources or peak demand reduction will be key resources, especially if these can be localized with regard to transmission-constrained load centers.
- **Demand Response to build over five years.** A joint agency (the CEC, CPA, and CPUC with CAISO collaboration) effort to achieve greater peak demand reduction through dynamic power pricing using advanced time-interval meters is just getting underway for small end users. The CPUC adopted a decision in June regarding pricing and programs for larger customers, where more of the load reduction potential exists. This joint agency initiative targets a 5% demand reduction from dynamic pricing tools after five years of implementation.

³ California ISO, *2003 Summer Assessment*, April 11, 2003, page 23.

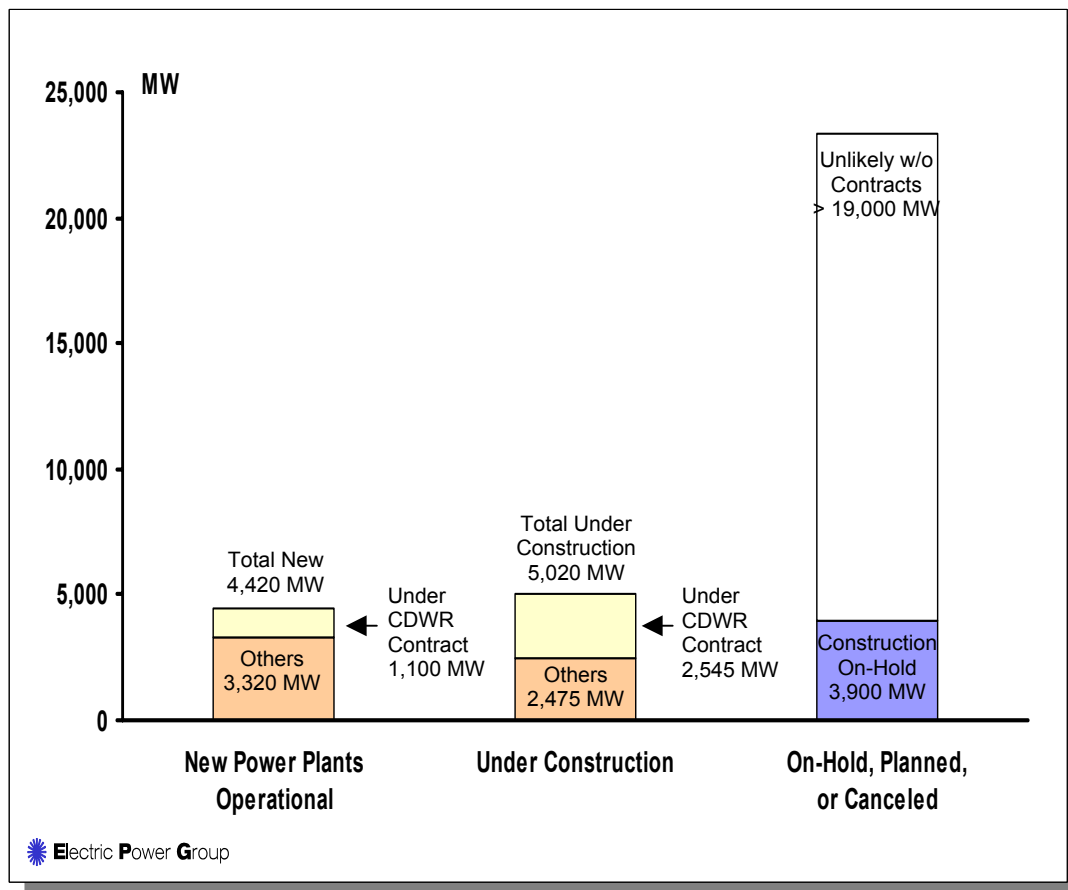
B. California Energy Resources Market

1. Investment in Generation and Transmission Resources and Reliability is Not Yet Adequate

In the past year we have seen expanding uncertainty with regard to power sector investment, capital availability, and power reserves. This section summarizes significant changes in the California power landscape in the past year.

Energy Suppliers' Financial Weakening – Continued financial uncertainty exists; the majority of major generation players in California stand below or barely at investment grade status. Only three private sector companies with significant project activity in California remain investment grade. Most power projects without firm purchase contracts are on-hold. (See Figure 1-3 and additional discussion of capital market conditions in item 2 below.)

Figure 1-3
Power Plants - New, Under Construction, and Uncertain



Source:

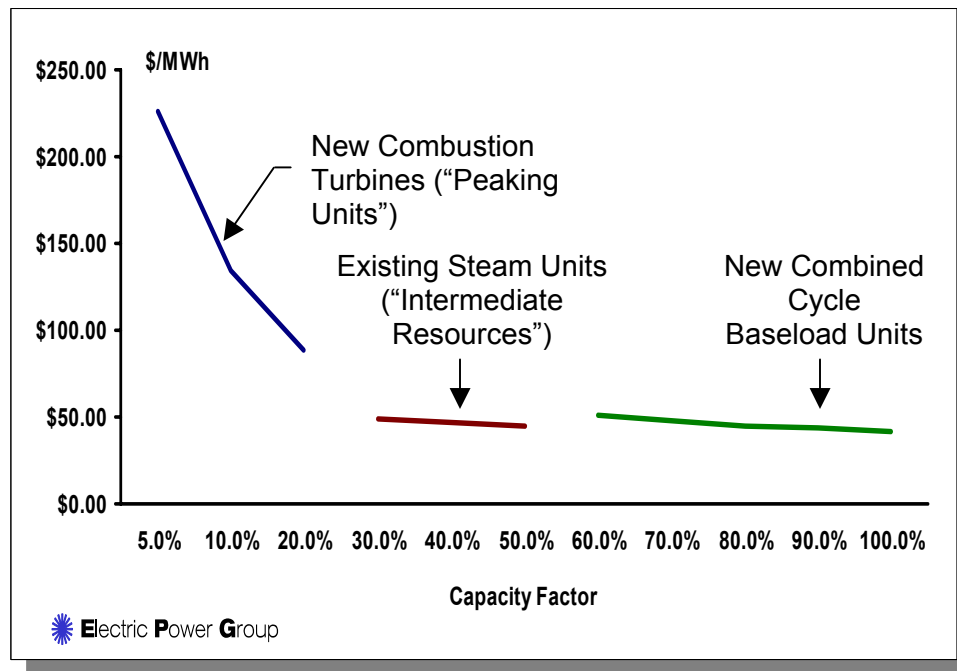
Data from CEC and CDWR contracts. In addition, approximately another 3,000 MW under CDWR contracts are being built outside of California or are categorized in other stages of the CEC process.

Substantial In-State Generation Lacks Supply Contracts – Even with all the contracts signed by CDWR, between 8,000 and 15,000 MW of in-State generation remain without a long-term contract for their output.⁴ To the extent that these plants are not pinned down, they are not a reliable source of power for California. They may be shut down, left off-line or their output sold to others.

Continuing Plant Decommissioning – In the next two years, at least 2,000 MW of California power production facilities will likely be shut down for economic or air quality reasons. An additional 1,600+ MW is expected to shut down by 2006. Some 6,800 MW (21%) of the State's fossil generation is over 40 years old, and another 11,300 MW (35%) is between 30-40 years old. It is too costly to retrofit these old plants to make them clean enough to meet current air standards. The trend of plant retirements likely will increase. These plants must be replaced with new capacity that is cleaner and more efficient.

Difficulty Attracting Capital for Peaking Plants – Attracting private capital to new combustion turbine gas peaking units in a market setting will require either a capacity contract with pass-through of full operating costs or an energy contract with prices of \$90-225/MWh. (The price range reflects varying hours of utilization.) Figure 1-4

Figure 1-4
Contract Price Needed to Obtain Investment



Assumptions: Combustion turbines - \$500 kW @ 16% annual carrying cost, 11.5 MMBtu/MWh heat rate @ \$3.50/MMBtu gas price, & \$3.00/MWh VOM.
Existing steam units - \$30-kW/Yr, 10.0 MMBtu/MWh heat rate @ \$3.50/MMBtu gas price, & \$3.00/MWh VOM.
Combined cycle - \$700 kW @ 16% annual carrying cost, 7.5 MMBtu/MWh heat rate @ \$3.50/MMBtu gas price, & \$3.00/MWh VOM.

⁴ Besides CDWR contracts, some of the existing resources may be affected by CAISO reliability must run (RMR) contracts, recent procurement contracts with IOUs for which specific information is not public, FERC-mandated must-offer requirements, and economic motivations for generators with DWR contracts not tied to specific resources.

illustrates the significantly higher costs for peaking plants, compared to baseload power plants, and assuming natural gas prices significantly below those we see today. We cannot rely on years of price spikes to encourage construction of more peakers.

Insufficient Fuel Diversity - We are beginning to see serious concern that North American gas supplies are not keeping pace with rising demand – both by end users and power generators. Natural gas prices have increased substantially in 2002-03 and the prospects are they will continue to increase. At the same time, California continues to experience an increasing proportion of natural gas-fired generation. Early implementation of the new Renewable Portfolio Standard (RPS) is vitally needed (and is set forth as an objective in the Joint Agency Energy Action Plan), as well as continued efficiency gains.

Incomplete Market Redesign – The ISO has proposed sweeping changes to the market design with the goal to improve market stability. The final design, however, is still in flux, the implementation dates uncertain, and the operational details and impacts not yet known. FERC proposed a similar, but distinct, “Standard Market Design” architecture, but by the end of 2002 was retreating under pressure from many State regulators. The net effect is that the regulatory climate and market rules are far from settled. Moreover, stability itself does not necessarily assure the lowest possible prices.

Bridled Contributions from Demand Reserves, Distributed Generation and Dynamic Power Pricing – Economic recession, regulatory hurdles, programmatic uncertainties and other factors have limited the hoped-for penetration of promising and cost-competitive demand reduction from demand response programs, new distributed generation facilities, advanced metering and dynamic electric tariffs. These remain viable future tools, but their effectiveness so far has fallen short of their economic potential.

Continuing Transmission Constraints – Numerous areas in the state have less than desirable power reliability due to long-standing limitations in the transmission system. The CAISO is proposing locational transmission pricing to help pinpoint locations for possible infrastructure investment. It is critical to address specific local reliability area needs with appropriate supply and conservation resources.

2. Lack of Capital Commitment

The typical sources of investment capital for the power sector are not eagerly offering their funds these days for power plant expansion and refurbishment.

Private Generators

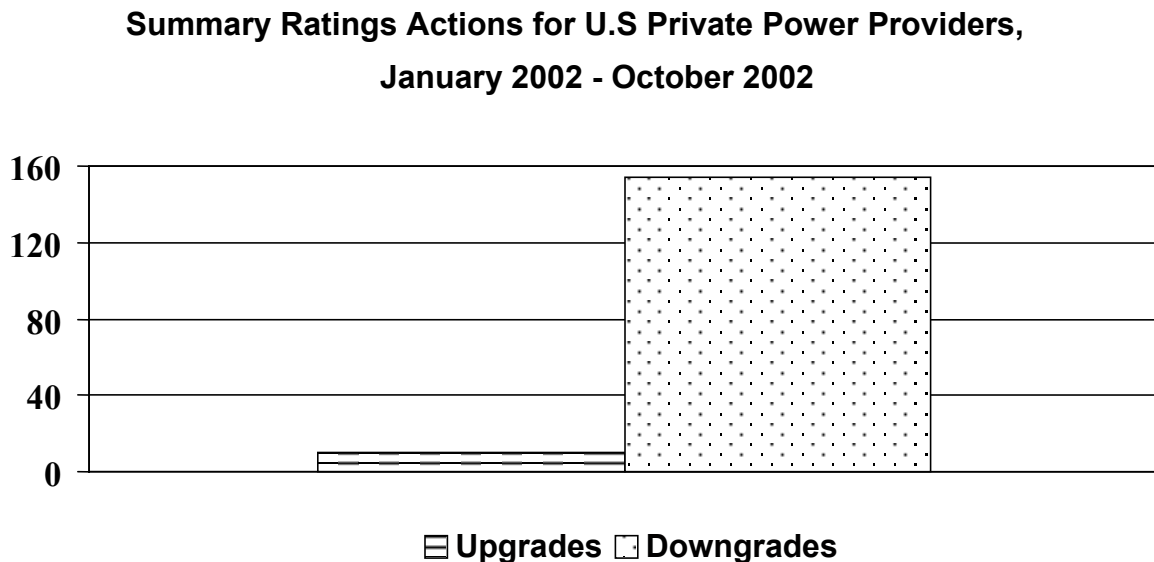
In 2002 the corporate debt market for the energy sector, and the merchant plant sector in particular, suffered the worst liquidity crisis seen in the energy sector in decades. An investor confidence crisis, triggered initially by the Enron bankruptcy, led to the realization by bank and public securities investors that diversification and expansion into energy trading presented risks the companies involved were simply not equipped to handle. It is a global phenomenon, but one affecting most those jurisdictions at the

forefront of deregulation. As a result, independent power providers either were locked out of the corporate capital markets or engaged in restructuring negotiations with creditors in the second half of 2002.

The liquidity crisis in the US merchant sector (largely unconnected to contracts or retail customers) was more acute because of the heavy speculative investments made in capacity. The situation was compounded by a vicious circle effect in which rating agency downgrades triggered automatic calls for cash collateral by energy trading subsidiaries. (See Figure 1-5.) The effective withdrawal of capital from the industry created a liquidity crisis and further spiral downward with the result that by year-end 2002, approximately \$90 billion of debt issued by the merchant power sector industry was at best below investment grade and at worst in effective Chapter 11 bankruptcy.

The result for California is that approximately 30,000 MW of both existing plants and others well along in their planning or construction are in the hands of companies that largely are unable to finance themselves and increasingly subject to control by creditors. The outlook for 2003 is a continuing lack of credit availability.

Figure 1-5
Ratings Changes for Private Power Providers



Public Power

The public finance sector of the U.S. securities markets has not shared such distress. Public financing for power generation facilities remains viable and indeed robust. Like most major sectors of the public finance market in this country, issuances for publicly owned power plants experienced a significant increase in 2002. In the public finance power sector, debt securities issuances rose by nearly 50%, to about \$12 billion (exclusive of the California CDWR bonds issued late in 2002 for loan repayment

purposes). This is the financial market the CPA plans to use for projects the CPA would own.

C. Institutional and Regulatory Developments

Just as there have been significant market developments, so too have the State's energy agencies been busy sorting out and advancing the rules of energy development and resource management. These include the following six major developments over the past year.

1. CPUC Procurement Proceeding -- Investor Owned Utilities (IOUs) Return to Electricity Procurement

At the end of 2002 the IOUs embarked on renewed power resource procurement, beyond the resources of utility-retained generation, QF contracts, and CDWR contracts. Nevertheless, the IOUs do not have sufficient energy and reserve resources under contract during peak periods. The IOUs are returning slowly to financial stability and have resumed purchasing their own residual net short resources. SDG&E can purchase power fully on its own credit, and SCE is expected to achieve this status the second half of 2003. At the end of 2002 both PG&E and SCE accomplished their net short procurement by posting cash collateral weekly for their spot market needs with the ISO, demonstrating that credit issues are not yet fully resolved.

The utilities have prepared and filed with the CPUC 2004 and 20-year procurement plans -- on May 15, and April 15, 2003, respectively. These plans are subject to regulatory and public review, with a CPUC decision on procurement plans anticipated in November 2003.

2. Renewable Portfolio Standard (RPS) Reinvigorates State's Renewable Energy Policy

The new RPS was enacted into law in the fall of 2002 and the CPUC issued procurement orders to guide the IOUs' responses. Both SCE and PG&E met the CPUC interim renewable procurement order (applicable to the three electric IOUs for 2003, before the RPS standards go into effect in 2003) to buy incremental renewable energy equivalent to at least 1% of their loads. SDG&E announced that it signed contracts to increase its renewable portfolio from 1% to 4% in 2003, and to 7% in 2004. For its renewable power purchases in late 2002, PG&E relied in part on CDWR credit to complete procurement transactions for the first year.

3. CDWR Contract Allocation to Investor-Owned Utilities

In September 2002 the CPUC allocated the CDWR long-term contracts to the three electric IOUs. The utilities now are responsible for performing day-to-day scheduling, dispatch, and administrative functions for the contracts allocated to their supply portfolios. These resources must be integrated into the long-term procurement plans mentioned above.

4. CPA Rulemaking Sets Reserve Target of 17% of Dependable Capacity

Over the second half of 2002 the CPA undertook and completed its rulemaking on electricity reserves. The CPA Board adopted the rule in January 2003, emphasizing that reserves are necessary for both reliability and to have controlled and rational markets. The rulemaking is not binding on regulating agencies, but advisory. Each regulator of a LSE will make trade-offs among reliability, cost, and risk tolerance necessary to determine the specific reserve targets for any utility's power resource portfolio.

The rulemaking states that LSEs should be responsible for acquisition of both energy and reserves for their customers. The recommended reserve level is 17% of dependable capacity, measured against the monthly peak of the LSE. The CPA believes this is sufficient to assure reliability and maintain stable prices, assuming the supply portfolio is constructed carefully. The CPA also recommended that demand-side reserve products comprise 25-50% of the reserves in any portfolio.

5. Resolution of Regulatory Treatment of Distributed Generation

On April 3, 2003 the CPUC adopted rules for applying charges to self-generation energy customers of the three IOUs. The surcharge idea was originally conceived to allocate the burden of costs incurred when CDWR began contracting for electricity. Customers who installed their own power generation before Jan. 17, 2001 (when CDWR began buying power) are exempt from most surcharges, as are customer generation systems that meet certain environmental criteria. The exceptions promote the development of various forms of alternative generation, up to 3,000 MW over the next decade. This action removes the cloud of uncertainty that has been discouraging customers from investing in distributed generation systems.

6. Demand-Responsive Pricing

The CPUC in June 2003 decided to utilize "price-responsive" demand programs and/or tariffs to reduce 5% of system peak demand by 2007 in IOU service areas. These targets are over and above existing MW goals for "emergency" interruptible rate programs and AC cycling programs. The approach takes different paths for large and small customers:

Large customers (those with monthly demands of 200 kW or more): a proposed voluntary enrollment in programs and tariffs that include Critical Peak Pricing, Hourly Pricing, Demand Bidding, and CPA's Demand Reserves Partnership program.

Small Customer Statewide Pilot Program: authorized March 2003 to enlist 2,500+ residential and small commercial customers in a carefully designed pilot to test customer response to and preference for Time-of-Use and Critical Peak Prices, including measuring responsiveness with various types of energy control technology.

D. Joint Agency Energy Action Plan

California's principal energy agencies cooperated over a period of six months in to jointly create an Energy Action Plan. It identifies specific goals and actions that send a clear message that investment is desired for both the more efficient use of energy as well as new electricity and natural gas infrastructure.

Specifically, the energy agencies' joint Energy Action Plan seeks to achieve six specific goals:⁵

1. Meet California's energy growth needs while optimizing energy conservation and resource efficiency and reducing per capita electricity demand.
2. Ensure reliable, affordable, and high quality power supply for all who need it in all regions of the State by building sufficient new generation.
3. Accelerate the State's goal for renewable resource generation.
4. Upgrade and expand the electricity transmission and distribution infrastructure and reduce the time before needed facilities are brought on line.
5. Promote customer and utility owned distributed generation.
6. Ensure a reliable supply of reasonably priced natural gas.

Shared principles and strategies for achieving these energy goals include:

- Attracting private investment for energy infrastructure to stretch and leverage public funds and consumer dollars, and
- Pursuing cost-effective and environmentally sound strategies.

Four of the goals have specific implications for potential CPA action. These four goals and the expected action plans that the CPA can support or otherwise facilitate include:

Goal #1 Energy Efficiency:

- Increase local government conservation and energy efficiency programs.
- Improve building efficiency by 5 percent.

Goal #2 Renewable Generation:

- Add a net average of up to 600 MW of new renewable generation sources annually to the investor-owned utility resource portfolio.
- Coordinate implementation with all relevant State agencies, and with municipal utilities to facilitate their achievement of the standard.

Goal #3 Reliable, Affordable Generation:

- Add new generation resources to meet anticipated demand growth, modernize old, inefficient and dirty plants and achieve and maintain reserve levels in the 15

⁵ *Draft Energy Action Plan*, April 7, 2003 (Discussion Draft), a joint document of the CPA, CEC, and CPUC.

percent-18 percent range. Current estimates show a Statewide need for 1500 - 2000 MW per year.

- Finance a few critical power plants that the agencies conclude are necessary and would not otherwise be built. An estimated 300 MW of peaking capacity located in critical areas is needed to provide local reliability, help achieve adequate reserves, and reduce congestion and the need for new transmission lines.

Goal #5 Distributed Generation:

- Promote clean, small generation resources located at load centers.

E. Conclusions for the CPA's Mission in the Years Ahead

The CPA has reached four conclusions about California's power reliability and resources that it believes should guide its efforts in the next few years.

- 1) It seems clear that private sector investment is most likely to provide base load and perhaps intermediate load facilities. These have a fairly predictable capacity factor, lend themselves to commercial financing, and are more likely to fit into the procurement cost framework of the utilities. Still, there is strong evidence that the continuing lack of capital for new generation may necessitate a public entity such as the CPA to help finance a few key projects. There are instances where critically needed generating units already approved and/or under construction are not likely to be completed by their developers due to financing barriers. To ensure adequate and reliable power in California, the CPA will offer to exercise its authority to "step in" as an alternative owner or lender for those projects, especially to ensure the completion of those needed by 2005 and 2006. This will require the CPA or its development to partner secure contracts for the output.
- 2) Peaking facilities, with their uncertain capacity factors and higher operating costs, are more likely to be shunned by private investment absent receiving very high peaking energy contracts or adequate capacity payments. It is also the case that market power and exorbitant power prices more likely will occur in peak periods. This points to two conclusions:
 - There are both reliability and cost advantages from public control of some level of peak resources and reserves (e.g., perhaps equivalent to 1-2% of the State's peak capacity needs for the limited hours of highest power demand). Trusting solely in the effects of price rationing and market incentives with a critical public good – electricity – is a mistake we should not repeat. With peak contracts from the load-serving entities, the CPA could own this modest amount of peak resources and still make a significant contribution to maintaining reliability and moderate prices, while preserving 98-99% of supply and investment contributions for the private sector.

- Demand-side reserves additionally can contribute a significant portion of peak resources at costs equivalent to or lower than peak generation resources. These programs have proven they can be dispatched, verified, and reliable when multi-year commitments are made to participating end users. The CPA has already initiated a statewide Demand Reserves Partnership (DRP) program under our existing CDWR contract. The added sanction approved in June 2003 decision at the CPUC encourages the CPA to expand its DRP program and the load reduction levels over the next few summers.
- 3) To ensure fuel diversity, an increasing renewable generation portfolio at affordable renewable power costs is necessary. To achieve the State's renewable goals set by the Governor and the Legislature, some amount of public ownership and/or financing may ensure these goals are met in a timely manner at affordable prices. If the CPUC and/or the LSEs wish to contract with the CPA, or with private developers working with the CPA, renewable generation can be secured at lower costs to ratepayers.
 - 4) Expanded implementation of cost-effective energy efficiency and distributed generation can keep demand growth flat. New models of third-party ownership and operation to take capital and performance risks, and leverage all available tax credits and incentives, can add to these technologies' use in public sector facilities, while still managing energy costs within constrained public budgets. The CPA can pursue those mechanisms that offer the most promise.

2. Power Authority Roles, Tools, Strategies and Implementation Framework

A. CPA Roles

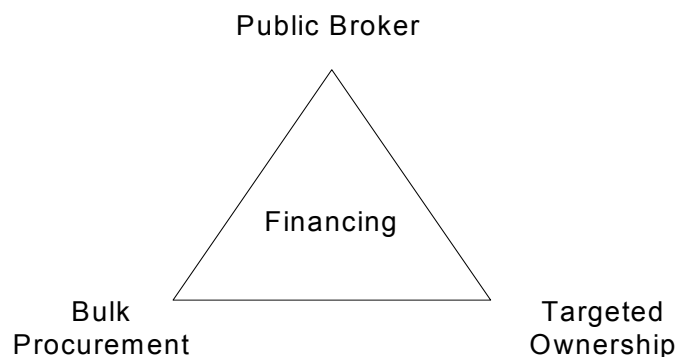
The CPA differs from the other energy agencies⁶ in that the CPA is a State financing authority that is entrepreneurial and intended to be self-supporting through its activities. The CPA's financing will be for projects and programs where others could not or have not invested, or for which the CPA's lower costs can benefit California consumers.

As an energy development and financing authority, the CPA may issue bonds for up to \$5 billion to help finance the development and installation of renewable energy, efficiency and select gas technologies. Of this amount, \$1 billion is authorized for efficiency projects. CPA financing typically will be provided to utilities or to power plant developers who provide power at a price that reflects their generating costs⁷ under a long-term contract to load serving entities. Alternatively, the financing will be provided to public entities or through a loan pool to individual businesses and consumers for energy efficiency and distributed generation.

In using its development and financing authority, the CPA can take on one of three roles, with or without a specific financing component. These roles are Public Broker, Bulk Procurement, and Targeted Owner of projects, as depicted in Figure 2-1. The CPA expects to take on one or more of these roles to assist other State agencies and the private sector to achieve the State's overall energy goals and energy resource development needs.

Figure 2-1

CPA Roles



⁶ California Energy Commission (CEC), California Power Authority (CPA), California Public Utilities Commission (CPUC), Electricity Oversight Board (EOB), California Department of Water Resources' California Energy Resource Scheduler (CDWR/CERS), and the California Independent System Operator (CAISO).

⁷ Pursuant to Public Utilities Code Section 3351(a).

Public Broker. In a broker role the CPA facilitates contracts between load serving entities and typically small-size “clean” energy suppliers, or between small borrowers and larger financial entities. The CPA has already helped some existing renewable suppliers contract with buyers, for example. The CPA also has investigated funding and packaging private and other public financing programs that might seek to either leverage CPA bond financing, or reduce transaction costs through combining multiple transactions at the same time.

Bulk Procurement. Renewable energy suppliers, especially of distributed resources like solar photovoltaic (PV) and fuel cells, have indicated they could significantly lower costs if they had a predictable, multi-year, higher-volume supply contract. The CPA is exploring a way to accomplish this with the CPA’s limited staff resources for program development and order solicitation.

Targeted Ownership. In selected instances, the CPA may own energy resources to ensure a critically needed power plant is built or to achieve lower costs to the consumer. There are three reasons why public ownership of certain key resources (e.g., peaking generation and/or renewable generation) may be desired. In all cases, experienced private sector parties would operate these facilities and dispatch would be under the control of the contracting authority, i.e., either the load-serving entity or the CAISO for certain grid-supporting resources.

- A single, statewide peak resource reduces redundancies. If each utility contracts for peak resources plus reserves for its non-coincident peak, the utility (and its ratepayers) may be over-investing. Public ownership of some peaking capacity would allow common use of peaking facilities to meet the needs of the highest system demand hours.
- Avoid potential for market price-spikes. The CPA is required to provide power at cost of service, and cannot apply any “scarcity rents” for the high load hours when market prices are highest. This would ensure during those hours there is no price gouging.
- Public financing is less expensive. Interest rates are lower and there is no profit (return on equity) for publicly owned energy resources.

B. Prerequisites and Tools for Project Development and Financing

In the past year the CPA explored in-depth the ways in which the five-year Investment Plan adopted in February 2002 could be implemented. This enabled us to more clearly define the prerequisites for successful CPA projects. These are described below for generation projects and customer-owned improvements, along with the typical structures for revenue bonds.

1. Generation and Other Supply Resource Projects

- CPA investments require concurrence as to need and siting by other agencies including the CPUC (when a resource serves investor-owned utility customers), the CEC, and in some cases, the CAISO.
- Bond financing requires a firm and adequate revenue stream, dictating the need for long-term power purchase agreements from power buyers (load-serving entities) before issuing any project financing.
- Private developers must be willing to sell their power output “at cost” including a reasonable return if the CPA is to finance the projects.
- Approvals of resources needed to address transmission-constrained load centers or pathways is most likely when resources are located north of Path 15, or in locally-critical transmission areas.
- Some excellent statewide solutions require involvement of parties not under the regulatory control of the CPUC (e.g., CAISO, municipal utilities, and/or direct access end users), thus creating challenges for developing participation and cost recovery rules.

2. Customer-Owned Efficiency and Renewable Energy Projects

Successful financing of efficiency and renewable energy solutions on customer premises dictates partnerships in implementation:

- If borrowers are private parties (e.g., consumers, business owners), IRS rules dictate that the Power Authority issue taxable bonds (at higher interest rates than tax-exempt bonds).
- Financing energy resources on customer premises requires multi-year payment commitments (e.g., 10-20 years for distributed generation).
- Arranging conservation or renewable distributed generation financing for end-users including businesses requires an intermediary (e.g., a retail or program administrator) to originate the loans and screen for credit, and some party to absorb credit (repayment) risk. These costs must be absorbed in interest rates or fees.
- The economics of bond issuance dictate lending pools of \$30-50 million at a time. For loans to consumers and businesses, a working capital pool to originate loans, followed by long-term bond financing once the portfolio reaches \$30+ million, best facilitates this. The CPA does not have such working capital.
- Development and administration of consumer or business energy improvement programs is typically paid for via the program or service offered by a manufacturer, distributor, or contractor. These costs cannot be supported through lending fees alone. CPUC and CEC (ratepayer) funds for efficiency and distributed generation programs do not support the overhead or repayment risk of financing programs (with the exception of a single CEC program for small loans to local public agencies).

- For the Power Authority to facilitate lower price “bulk purchases” of distributed generation technologies would require front-end budget resources for Statewide sales and marketing activities to obtain volume orders.

3. Revenue Bond Structures

The CPA must structure its revenue bonds consistent with established public finance debt market conventions. Following are two examples.

Energy Efficiency Bonds

The CPA could issue a revenue bond in a \$30 million or larger denomination to recapitalize a portfolio of existing loans with a proven record of repayment. The revenue stream needs to be sufficient to repay and secure the bonds. If the proceeds are used by local public agencies, the bonds can be structured on a tax-exempt basis.

Power Generation Bonds

The CPA would issue long-term bonds with maturities of 20 years or longer. The bonds would most likely be structured as taxable obligations, depending on the identity of the sponsor in each case and the entity taking delivery of the output. Consistent with market requirements, any such bond financing requires a contract from a creditworthy party to purchase most, if not all, of the output and to provide the primary source of debt service and operating funds. That contract would have to extend through or beyond the maturity of the bonds. Bonds for individual peaker plants (e.g., 50 MW) might range up to \$25 million, and for baseload plants (e.g., 500 MW) up to \$600 million.

C. The Power Authority’s Overall Investment Strategies

The CPA’s first Energy Resource Investment Plan published in February 2002 provided a ten-year outlook and a five-year investment plan. That plan laid as its foundation a three-pronged investment strategy. These three strategies continue to guide the current Investment Plan. The strategies, along with the CPA’s recent achievements for each, are as follows:

1. Strategic Reserves – targeting clean resources to help meet the peak demand and system reserve needs:

- Statewide power generation reserves,
- Reserves targeted for local reliability -- in localized areas needing enhanced local reliability,
- Demand reserves, where customer power demand can be reduced “on call” to meet supply shortages when this is more cost-effective than buying power on the spot market. This also targets “real-time” or equivalent pricing for large energy users that received State-funded advanced meter and communication systems during 2001-2003.
- “Safety-net” power resources, where public ownership or financing is necessary to ensure sufficient resources for California.

Significant Power Authority achievements with strategic reserves:

Developed the Demand Reserves Partnership program to provide dispatchable peak demand reduction in the form of cost-competitive ancillary services and supplemental energy. Initial sign-ups totaled 20 MW in 2002, with prospects for 100-200 MW in 2003.

Supported re-negotiation of the Williams energy contract, resulting in the donation of 300 MW of peak generator units and cash for development activities to site the units in transmission-constrained regions of Fresno and San Francisco.

Adopted a reserve rulemaking that defines adequate reserves as a target of 17% of dependable capacity. Developed this via extensive collaboration with the CPUC, CEC, and CAISO to agree on common terms and measures.

2. Clean Energy Financing – using the CPA’s capability to facilitate financing to accelerate the use of clean resources – renewable energy and energy efficiency:

- Grid-connected renewable energy resources, such as wind, geothermal, biofuel, and landfill gas,
- Customer end use efficiency achieved via technological improvements, and
- Distributed generation (fuel cells, on-site solar, combined heat and power).

Significant Power Authority achievements with clean energy:

Facilitated 150 MW of short-term contracts with CDWR to keep available power supplies from existing biomass power generators.

Aggregated 2400 MW of renewable generator letters of interest for consideration in the fall 2002 IOU renewable energy Request for Offer solicitations.

3. Greening Public Buildings – targeting clean resources (efficiency and on-site generation) for State and local governments and schools:

- The public sector uses 5-10% of California’s electricity. “Greening” the facilities involves energy efficiency, load management, on-site renewable energy, and distributed generation.

Significant Power Authority achievements in greening public buildings:

Issued a \$28 million revenue bond in April 2003 to re-capitalize the CEC’s conservation loan program for local agencies.

Designed with multiple State agencies a “Solar Schools” program to invest energy contract settlement funds paid to the Attorney General’s Office in solar PV systems on public schools. Paid \$2.25 million to the CEC for a first round of solar installations for schools.

D. Implementation Framework for Projects

All of the Power Authority's energy development and financing activities must achieve the following standards:

- Resources for which there is a consensus on their need.
- A balanced mix of resources (some base load, some dispatchable) to meet the load serving entities' load requirements. Renewable resources are not always available or dispatchable in the exact quantities needed at specified times.
- The cleanest possible energy solutions.
- Affordable solutions – resources that are cost-effective and made available at-cost (note: fossil-fueled resources may be the lowest cost for some needs).

The CPA is committed to working in collaboration with sister energy agencies to ensure there is consensus that CPA project development and/or financing activities meet these standards. The framework for our activities involves the following:

1. *Resource Need:* We will verify need for any project through one or both of these steps:
 - We will consult the CAISO to identify areas of reliability constraints that could be helped by additional strategically located generation.
 - We will consult with the CEC and any affected load-serving utility regarding analysis of demand and resource needs, identification of gaps, and potential resource investment activities necessary to meet these needs or gaps.
2. *Project, Cost, And Revenue Authorization:* In the case of resources to be provided for investor-owned utilities, we will seek authorization of new resource development through the CPUC's established procurement procedures. We anticipate the following steps:

CPA-Initiated Projects

- We (or a private project developer) will present resource options and deals to utilities for their consideration, with the CPUC as arbiter of IOU resource portfolios.
- The CPUC also can choose to present or "assign" resource fulfillment (e.g., for renewable energy) if it finds gaps or unacceptable proposals in IOU procurement plans.
- The CPUC becomes the arbiter of need and specific IOU resource procurement plans to meet that need.
- Upon CPUC approval of the procurement plan, the load-serving entity will agree to a contract or other mechanism. Together these will confirm the need and the revenue stream to support a CPA-arranged resource solution.

CPUC and CEC-Identified Projects

- CEC/CPUC joint efforts on RPS procurement may identify and refer to the CPA for consideration projects that need either financing and/or public ownership as a means to keep costs as low as possible.
3. *Competition and Private Business Roles:* The CPA's general approach to seeking out programs and projects for development and financing will rely upon open, competitive solicitations of private businesses (or in some cases non-profit organizations) that can provide development, ownership, and/or operator services. These will be secured with contracts. For specific projects, any resources initially owned by the CPA later may be transferred to private ownership (whether to utilities or generators) so long as this does not jeopardize any finance or tax restrictions. Projects owned and financed by CPA bonds will continue to provide power on a cost of service basis, even if ownership is later transferred to a private entity.
 4. *Structure and Sale of Financeable Debt:* In structuring bonds the CPA will receive authorization and direction from the CPA Board of Directors. Staff will conduct analysis and diligence, and structure the financing in consultation with the State Treasurer's Office (as agent for sale), outside financial advisors, bond counsel, underwriters and other professionals, as required.

3. 2003-2004 Energy Project Development and Financing

The Power Authority's development and financing activities for 2003-04 are laid out below for each of our three strategies: reserves/reliability, clean energy, and greening public buildings. These are supported by several policy and strategic activities.

Overall, the Authority targets the development of up to 1,000 MW in resources, for which some \$650 million to \$1.3 billion in financing may be arranged.

A. Strategic Reserves and Reliability

➤ CPA-Owned Reliability Peakers

The CPA has initiated an effort to increase the Statewide electricity reserve margin to ensure reliability and reduce peak price volatility. The goal is to obtain up to 300 MW of new efficient peaking resources under CPA ownership, with the power output to be provided *at cost* for California's electricity consumers. The CPA invited proposals from generators that meet three primary criteria: lowest cost, proximity to reliability-need areas, and earliest on-line date.

- **Lowest cost.** This can be achieved most easily with new peaking facilities located at sites with existing generation infrastructure. These ideally would have transmission and natural gas connections and other necessary infrastructure, although sites without existing plants may be considered if priced competitively. Given current economic conditions and costs of equipment, the CPA expects an installed cost of \$500/kW and proposals to be bid accordingly at a reasonable maximum price.
- **Proximity to reliability-need areas.** Reliability peaking plants will be sought in local areas with greatest reliability need, as identified by the CA-ISO. The proposed projects must be on sites near the interconnection points identified by the CA-ISO.
- **Earliest on-line date.** The CPA targets new peaking facilities that can be in commercial operation by Summer 2005. Only proposals with a scheduled on-line date prior to September 2005 will be considered.

The power purchase agreement and related activities will include coordination with the CAISO and applicable transmission owners, and seeking approvals by the CPUC and the load-serving entities that will contract for the peak resources. These arrangements will address contracts, revenue mechanisms, and power dispatch. It is imperative that the CPUC give prompt consideration to authorizing procurement of these new resources if they are to be available by 2005.

➤ **CPA “Step In” Strategy For Assisting In The Successful Development Of Reliability Power Plants**

The CPA’s interest is in assisting the successful financing and deployment of reliability power plants that are needed now. The reasons have been spelled out previously in this Plan.

The CPA is committed to identifying critical reliability system plants (virtually all of which have been identified by the ISO and the CEC). The CPA intends to provide assistance in two critical areas:

- Assisting in developing take or pay power purchase agreements with load serving entities that appropriately value new power plant deployment in critical locations, and other related financial security mechanisms.
- Providing financing to enable project completion.

By bringing capital resources to much-needed reliability power plants at this time, the CPA can help with the transition back to private investment in the State’s power market. This also will demonstrate the commitment of the State of California to insure the deployment of critical power resources for the State’s consumers. Where the power buyer(s) are subject to CPUC jurisdiction, the CPA expects to follow the authorization process outline in our Implementation Framework (section 2 D. of this Plan). Included in our 2003-04 project plans below is a proposal for expedited CPUC approval of power contracts for a Calpine-developed, CPA-financed 500 MW baseload plant (Otay Mesa) in the San Diego area. This is one of five plants the CEC marks as high probability generation additions counted on to meet power needs in 2005.

➤ **Demand Reserves**

Dispatchable demand reduction programs help meet load, maintain reliability criteria and moderate market power. They are most effective when uniformly available Statewide. Such programs can have a substantial effect on peak power prices and they can help control peak load.

The CPA’s existing Demand Reserves Partnership (DRP) is a good example of a Statewide demand program. Under a contract with the CA Department of Water Resources California Energy Resource Scheduling (CDWR-CERS), the CPA provides demand reserves for use as ancillary services in the ISO market or as a call option to reduce energy purchases during very high cost hours. Marketing for the program began in July 2002 through a group of Demand Reserve Providers that aggregate participating end users over 200 kW and provide monthly payments for dispatchable capacity. Approximately 20 MW of demand reduction was under contract by October 1, 2002.

Over the past year, a joint CPUC-CEC-CPA Interagency Working Group chaired by CPUC President Peevey has been working on ways to accelerate use of advanced metering and demand responsive load programs. The CPUC issued a proposed

decision in June affirming the benefits of the DRP as one of several programs in the State's demand response portfolio and ordering IOUs to facilitate its operation. The CPA is working with the investor-owned utilities to determine the best way to allocate the CDWR contract and schedule the resource to match their requirements.

Type of Project	CPA Role	Potential Financing Amount	Milestones Anticipated	Time Frame
RELIABILITY AND STRATEGIC RESERVES				
Peaking Resources				
LM6000s (Attorney General's Williams settlement "peakers") San Francisco (4x50 MW)	For City & County of SF: Development support for AFC filing, RFP preparation & selection, negotiation of project agreements. Option right to purchase 4 units if City unable or elects not to proceed.	None. City will finance	<ul style="list-style-type: none"> Secure site AFC filing Start construction Commercial operation 	<ul style="list-style-type: none"> January 04 January 04 May 05 June 05
LM6000s (Attorney General's Williams settlement "peakers") Fresno (2x50MW)	For Kings River Conservation District: Review & approve payments from escrow fund for development costs. Other development tasks, as assigned. Option right to purchase 2 units if KRCD unable or fails to construct.	None. KRCD will finance.	<ul style="list-style-type: none"> Obtain site control Complete AFC filing or local permits Start of construction Commercial Operation Date 	<ul style="list-style-type: none"> April 03 February 04 January 04 July 04
CPA-Owned Reliability Peakers	Finance approximately 300 MW of new efficient peaking reserves for CPA ownership.	Up to \$250 million	<ul style="list-style-type: none"> Issue RFP Select projects and contractors Financing Commercial operation 	<ul style="list-style-type: none"> February 03 May 03 Spring 05 Summer 05
Demand Reserves Partnership, targeting up to 200 MW for 2003	Manage current CDWR contract	No bond financing; Program costs provided by contract revenues	<ul style="list-style-type: none"> CPUC approves CDWR revenue requirement CPUC decision on demand response programs Work with IOUs to allocate DRP Program marketing for 2003 begins 150-200 MW under contract 	<ul style="list-style-type: none"> 2/03 Spring 03 2/03 – 6/03 2/03 7/03-10/03

Type of Project	CPA Role	Potential Financing Amount	Milestones Anticipated	Time Frame
Baseload “Step-in” Plants				
San Diego County - 500 MW Base Load Combined Cycle (natural gas) Plant	Possible assistance with developing purchase power agreement and/or project financing.	\$200-600 million	<ul style="list-style-type: none"> • Project approvals • Construction • PPA • Financing 	<ul style="list-style-type: none"> • Completed • Underway • 2nd half 2003 • December 03
		Sub-Total \$200-850 million for 750-800 MW		

B. Clean Energy

➤ Financing Renewables

The CPA anticipates promoting the development of and providing financing for renewable energy resources through at least four avenues in 2003:

- *Financing the Renewable Portfolio Standard (RPS)* – The CPA can finance renewable projects possessing a long-term power purchase agreement with an investor-owned utility obtained through that IOU’s competitive solicitation.
- *RPS Developer “Backstop”* – The CPA can develop, finance, and own renewable energy resources at-cost for the benefit of IOU customers, possibly using tax-exempt debt. If an IOU fails to comply with a CPUC order adopting a renewable procurement plan and/or requests relief from the CPUC, Senate Bill 1078 provides for CPUC authorization of “another entity” to enter into contracts on behalf of customers for deliveries of renewable resources. The CPA is prepared to carry out this role if so desired, to achieve the State’s renewable goals at the lowest possible cost.
- *Aggregation of Small Renewable Energy Resources* – CPA could aggregate like-kind renewable energy resources of smaller size (e.g., under 5 MW) and bundle certain services incident to power supply transactions related to these smaller facilities. This facilitation role could enable smaller renewable energy resources to participate in the IOUs’ competitive solicitations for renewable resources with reduced transaction costs.
- *Renewables for Municipal Utilities* – In another form of aggregation, the CPA can provide financing or turn-key renewable power for municipal utilities using at least two approaches:
 - Arranging financing for individual, private developer-proposed and owned renewable projects possessing a long-term power purchase agreement with a municipal utility and,
 - Compiling a portfolio of CPA-owned and financed renewable projects from which shares of the power output are sold to several municipally-owned systems, thereby achieving better economies of scale.

➤ Industrial Development Bonds (IDBs)

This strategy fulfills two objectives – to drive down the cost of clean energy technologies via expanded production scales, and to accelerate manufacturers’ undertaking clean energy improvements to their production facilities. This program approaches both objectives by extending the advantages of lower-interest, tax-exempt financing to selected private manufacturing investments that advance the goals of clean energy. This will be done consistent with regulations of the Internal Revenue Service and California Debt Limit Allocation Commission regarding tax-exempt, private activity bond financing. The 2003 strategy is to award up to \$30 million of such financing to eligible manufacturing companies for:

- The purchase and installation by eligible manufacturing companies of renewable energy systems, energy-efficiency equipment, or clean distributed generation systems; and,
- The manufacture of renewable energy components or systems and of clean distributed generation systems or components.

Type of Project	CPA Role	Potential Financing Amount	Milestones Anticipated	Time Frame
CLEAN ENERGY				
Renewable Energy				
Financing the Renewable Portfolio Standard	Provide financing to projects fulfilling RPS needs	Unknown	<ul style="list-style-type: none"> • Work with prospective bidders to IOU solicitations on potential CPA finance terms 	<ul style="list-style-type: none"> • 2nd half 2003
RPS Developer “Backstop”	Develop, finance and own renewables to help IOUs fulfill RPS goals	Unknown	<ul style="list-style-type: none"> • Receive possible CPUC authorization to enter into contracts on behalf of IOU customers 	<ul style="list-style-type: none"> • Late 2003
Aggregation of Small Renewables	Aggregate small renewables and bundle related services	Unknown	<ul style="list-style-type: none"> • Identify candidate projects • Submit proposal in next IOU RPS solicitations 	<ul style="list-style-type: none"> • Mid 2003 • Mid to Late 2003
Municipal Utility Renewable Projects	Financier	\$400 million for 185 MW Salton Sea geothermal project	<ul style="list-style-type: none"> • Identify specific project • Perform due diligence • Financing 	<ul style="list-style-type: none"> • Jan 2003 • Underway • Aug 2003
Industrial Development Bonds	Program Administrator, Financier	\$30 million	<ul style="list-style-type: none"> • Launch marketing • Select loan candidates • Process bond financing 	<ul style="list-style-type: none"> • April 2003 • Summer 2003 • Fall 2003
		Sub-total \$430+ million for 185+ MW		

C. Greening Public Buildings

The lessons learned since the original Investment Plan underscore that, absent unique credit or collateral resources, the CPA currently is best able to offer financing to public agency borrowers for end use efficiency and on-site renewable and distributed generation equipment. Accordingly, the 2003-04 strategy will focus on offering public buildings financing, third-party solar energy sales, and a school grant program.

➤ Revenue Bond to Recapitalize California Energy Commission Efficiency Loans

This first bond in an anticipated series was issued in April 2003 to provide funds to the California Energy Commission (CEC) to replenish its Energy Conservation Assistance Account. That CEC program lends funds (for \$2 million or less) to local governments, including school districts, and certain tax-exempt organizations. The bond proceeds provide the CEC a new capital infusion to continue to issue loans, while leveraging the established loan repayment history by local government borrowers. The \$28 million Series 2003 bond matures in 2016.

➤ Third-party Solar Energy Sales to State Facilities

The CPA is investigating the feasibility of a program to help achieve the solar installation goals of SBxx 82 (2001) for State facilities. Given the State's critical fiscal situation, no State agencies are likely to have the capital to purchase discretionary clean energy equipment. Yet this equipment can reduce the annual operating costs for State facilities of purchasing energy from commercial utilities. This program will seek to structure CPA, or some other third-party, investment and ownership of solar PV, selling the solar energy output to the user facility at an effective cost competitive with buying power from local utilities. To be successful, this program would require adequate program staff and budget resources, the willingness of State agencies to enter the necessary long-term energy purchase agreements, and the ability to obtain acceptable costs from equipment and installation partners.

➤ “Solar Schools”

This is a grant-oriented program that draws upon contract litigation settlement payments by energy companies resulting from agreements reached with the Attorney General's Office. A CPA-led interagency effort designed this grant program, paying up to half of the cost of solar systems on public schools (in addition to Statewide rebates from the CEC for up to half the cost of systems). By coupling the settlement funds with the regular renewable energy incentive payments administered by the Energy Commission, public schools can obtain solar energy at little or no cost, while providing a teaching opportunity for renewable energy.

Type of Project	CPA Role	Potential Financing Amount	Milestones Anticipated	Time Frame
GREENING PUBLIC BUILDINGS				
CPA Bond Re-funding CEC's ECAA Local Agency Loans	Bond issuer	\$28 million for efficiency and demand reduction (to be determined)	<ul style="list-style-type: none"> Bonds issued 	<ul style="list-style-type: none"> April 2003
Solar Schools	Program design; Implementation oversight; Funds transfer	\$8.5 million grants for 2003, and again 2004, leveraging CEC solar incentives	<ul style="list-style-type: none"> Funds transfer Program review 	<ul style="list-style-type: none"> January Ongoing
Third-Party Solar Energy Sales to State Facilities	Program administrator; Developer Financier	First year installations estimated to be 1-2 MW+	<ul style="list-style-type: none"> Program concept State agency feedback Supplier solicitation State energy contracts Installation Operation 	<ul style="list-style-type: none"> Spring Spring Summer Fall Fall – onward Fall -- onward
		Sub-Total \$28 million+ for MW to be determined		

2003-04 TOTAL ALL INVESTMENT STRATEGIES	\$658 million to \$1.3 billion for up to 985 MW of power resources
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D. Policy and Strategic Contributions

The CPA participates with other State and federal agencies, as well as the State Legislature, wherever collaboration is invited and beneficial, or where initiatives are needed to permit the CPA to carry out its mission. Examples of activities expected in 2003-04 include:

California Public Utilities Commission (CPUC) Regulatory Proceedings

- Power procurement by investor-owned utilities:* The CPA will continue to collaborate with the CPUC, CEC, and investor-owned utilities during 2003 regarding the resource plans and specific procurement strategies by the IOUs. The CPA's focus will be on ensuring that environmentally responsible and cost-effective options are considered for meeting renewable energy, localized reliability, and demand response resource needs. CPA may be able to offer ownership and/or financing solutions to achieve these needs.

- *Distributed generation (DG)*: The CPA will continue to monitor and file testimony or comments to achieve expanded deployment of clean DG via CPUC action on such issues as stand-by charges, “departing load” fees, and other economic/regulatory barriers to DG. This resource also may enhance local distribution system reliability.
- *Advanced meters, dynamic pricing, and demand response*: The CPA will continue its role as one of the three energy agencies working collaboratively to expand the metering and communication hardware deployment, with associated time-differentiated tariffs, where these are cost-effective and can bring more real-time balance between power demand and power costs. The CPA’s specific focus is on creating a market for expanded demand response, and assessing a potential role in financing the hardware deployment if this would help reduce ratepayer costs.

Collaboration on CEC Integrated Energy Policy Report

CPA staff is participating in the CEC’s integrated policy report effort, which expects to produce a report by November 2003.

Policy Support to the Administration and Legislature

The CPA supports energy policy development through weekly briefings with Administration officials and dialogue with the Legislature. The CPA works diligently with the CPUC, CEC, and CAISO on various energy policy issues to achieve coordinated viewpoints and information on energy issues.

In summary, for 2003-04 the Authority targets the development of nearly 1,000 MW in resources, consistent with the Authority’s three-prong strategy for reliability, clean energy, and greening public buildings. These projects may result in the CPA arranging project financing for some \$658 million to \$1.3 billion of energy resource investment.

Appendix- 2002 CPA PROGRAMS & INITIATIVES

The following seven-page table lists the numerous projects undertaken or investigated by CPA staff in 2002. For each we indicate the scale or scope, status, and the outcome or lessons learned. The project activities are listed in categories corresponding to our overall investment strategies (clean energy, reserves and reliability, and greening public buildings), as well as crosscutting policy and legislative activities. It is clear that the CPA's modest-sized staff (about 10 technical/professional personnel) was extremely active and pursued many opportunities. There were many lessons learned as a start-up agency. The first financings and power projects are anticipated in 2003.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 CLEAN ENERGY FINANCING ACTIVITIES				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
Renewable LOIs <ul style="list-style-type: none"> • Solar • Wind • Geothermal • Biomass • Landfill Gas 	To help the State meet its RPS goal by offering to aggregate and package renewables.	2400 MW	CPA participated in IOUs RFO solicitation process by aggregating renewable projects to submit as bids	In response to CPUC ruling that required IOUs to purchase renewables to meet 2002 net short, the CPA submitted bids to IOUs. All three IOUs rejected our bids.
Existing Biomass Projects	To broker the procurement of existing biomass plants in jeopardy of shutting down in order to keep providing air quality and solid waste management benefits.	150 MW	CDWR entered into short-term contracts with biomass facilities.	In December, CDWR extended contracts with four facilities for another six months.
Municipal Utility Renewable Solicitation	To package renewable projects dedicated to municipal utility use that will help diversify their energy portfolios.	85 MW to 100 MW portfolio size	CPA received nine expressions of interest from municipally owned utilities.	CPA is in discussions with the nine respondents.
Industrial Development Bonds	To support via tax-exempt interest loans the manufacture and installation of renewable energy technologies and systems, and installation of energy efficiency on manufacturing facilities	\$30 million offered in 2002	CPA received project 12 applications totaling \$69 million; 4 totaling \$27 million were awarded, but none closed in the 2002 calendar year. The 2002 IDB allocation was returned to CDLAC.	One \$8 million project held-over to 2003. Marketing must be targeted to more-established small firms. 2002 was one of the worst nationally for issuing IDB loans to manufacturers due to the economic damper on investment.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 STRATEGIC RESERVES ACTIVITIES				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
Peaker Letters of Intent (LOIs) - "Public Ownership of Peak"	To finance peaking power plants to ensure adequate reserves	Approx. 300 – 500 MW to be contracted in 2003	1) Fall 2001 efforts were suspended 2) 2003 efforts will include issuance of RFP to select projects to be on-line in 2005	The 2001 Peaker LOI solicitation process was suspended due to the lack of power purchasing agreements available. Need to secure committed revenue stream from CPUC/IOUs or CAISO.
San Francisco "Peaker"	To develop peaking capacity to support reliability at the San Francisco Airport and the remainder of the San Francisco capacity-constrained area.	100 MW plus	Project suspended during 2002 due to a new SF Electricity Plan and opportunities associated with the Williams Companies settlement.	Project replaced by larger 200 MW project [four LM 6000s from Williams Company settlement] to be sited in the San Francisco area. Siting to occur during 2003, with generation on-line by late 2004 or early 2005; potential to shut down Hunters Point plants.
Demand Reserves Partnership	To provide dispatchable clean peaking resources via demand reduction to help meet load, maintain reliability and market power.	Targets: 150 MW supplemental energy; 350 MW ancillary services	20 MW to date; On hold fall-winter 2002-03 pending resolution at CPUC of CDWR authority, revenue requirement, and allocation of MW to IOUs.	Working to allocate MW resources to IOUs from CDWR. Need promise of multi-year program to enlist end user participants. CPUC decision in spring 2003 may achieve this result.
Real Time Metering RFP	Finance advanced meters on turn-key basis to 10,000+ customers below 200 kW who did not receive State general fund –supported free meters in 2000-01	Received 11 proposals	Authorized 4 loans 3/02, subject to meeting revenue bond criteria. First loan assigned 7/02 via underwriting for private financial placement, but not successful. None of 4 financed.	Only one applicant has revenue stream to support financing. Others dependent upon future CPUC decision and/or utility contracts. Issue of utility or customer ownership of meter complicates security for financing.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 STRATEGIC RESERVES ACTIVITIES (Continued)				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
Reserves Rulemaking	To set a Statewide target for adequate reserves that will ensure energy reliability and affordability	Target is 17% of dependable capacity	CPA Board adopted the rule on Jan. 17, 2003	Target is advisory to CAISO, CPUC, and public utilities. Identifies need for additional resources.
Generation "Step In" Projects	To act as a State safety net to ensure development and financing of baseload generation to ensure its completion.	Calpine's Otay Mesa project (500 MW)	In negotiations with project developers who already have permits and power purchase agreement.	Deal terms to be decided in 2003.
Williams Settlement of LM 6000 Peaking Generators	To help develop peaker projects in reliability constrained areas of the State.			
<ul style="list-style-type: none"> Kings River Conservation District Peaker Project 	CPA technical support to ensure project's timely completion	100 MW	In development phase with District officials	Commercial operation targeted for July 2004
<ul style="list-style-type: none"> San Francisco Peaking Units 	CPA providing development support to ensure construction	200 MW	In development phase with the City/County of San Francisco	Commercial operation targeted for June 2005

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 GREENING PUBLIC BUILDINGS ACTIVITIES				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
Distributed Generation (DG) Request for Bid: Solar PV, Fuel Cells, Combined Heat & Power	To drive down costs for DG technologies through bulk procurement of technology on behalf of State & local public agency buyers	Sought bids for 1000+ MW over 5 years. Received 66 proposals.	First round qualified 62 proposing parties. Second round for contract and price award was suspended due to non-feasibility of ensuring purchase orders for magnitude of awards targeted.	Initial prices at first round suggested technologies might match commercial price of power. Added costs of marketing, procurement, project development & contract management made only cogeneration economically feasible. Government budget constraints could not guarantee reaching targets for contract scale. Many host agencies prefer 3 rd party ownership & maintenance. Elected to offer PULSE financing that CPA can administer with lower threshold size and overhead costs, but not bulk-priced technology.
Public Agency Energy Financing (PULSE)	Offer tax-exempt financing of \$2 million or more for energy projects too large, or that do not qualify for CEC local agency financing. Turnkey financing team to reduce costs for individual agency borrowing.	\$50 million target for first round bond funding	\$500 million expression of interest from agencies; \$87 million in applications received 10/02, but only \$13 million authorized & possible; Application period re-opened Nov – February 2003 No new applications received. Program suspended.	Need to build portfolio to get to \$30-50 million for initial bond; Lack revolving funds to make loans in advance of having a large bond pool; Lending terms attractive to agencies needing \$2-10 million, but waiting for pool is not acceptable; Budget crisis cools interest in discretionary capital energy projects.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 GREENING PUBLIC BUILDINGS ACTIVITIES (Continued)				
"Solar Schools" Program (From Attorney General's Alternative Energy Retrofit Account, from power contract settlement payments)	To encourage the installation of solar at public schools in IOU areas by combining CEC grant and AG's funds to cover 90% of system costs; remaining 10% can be financed via CEC loan program.	\$2.75 million from 2 settlements to be paid 2002 – 2004.	25 schools eligible for the 2002 funding of \$1.75 million for up to 20kw of PV within each school district. Awards over-subscribed in Northern California. Program suspended without awards after 1/03 JLBC request to review/oversee settlement funds.	Interagency group designed program. CEC agreed to administer in tandem with CEC renewable buydown grant program. CPA worked with CEC to streamline program for anticipated Williams settlement funds. Legislative budget oversight issue of settlement funds surfaced with Attorney General; JLBC requested that DOF not authorize CEC to spend funds transferred from AG/CPA.
CPA/CEC Efficiency Bond	To issue bond to turnover portfolio of CEC's Energy Conservation Assistance Act program loans to local agencies.	\$28 million	CPA issued bonds April '03. Moody's rated Aa3 (very good).	Program's 20-year track record of repayment provides strong basis for issuing bond.
Third Party Distributed Generation Development & Financing	To reduce annual operating costs for State facilities of purchasing energy from commercial utilities, by offering turnkey third party ownership/financing of DG technology.	Not estimated	Extensive conversations with DOF, LAO, and JLBC to determine policy interest in this energy procurement model. CPA staff preliminary assessment of program options, staff and budget resources needed to execute this program.	Program on-hold pending ability to commit significant personnel resources.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 POLICY INPUT ACTIVITIES				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
CPUC Proceeding Filings 1. Procurement OIR 2. Metering OIR 3. Distributed generation 4. Loan repayment via utility bills	To offer unique or strategic input into key energy regulatory and policy activities that will affect CPA's ability to perform its mission	Varies from preparation of comments, to sponsoring testimony, to active co-management role of proceeding.	1. Policy/rulemaking first phase of proceeding complete; 2003 for plans and proposed contracts. 2. Phase 1 June '02 – March '03. Pilot authorized 3/03 and 2 nd decision scheduled 5/03 3. Primary rulemaking and surcharge issues decided 10/02-4/03. 4. Request filed at CPUC 1/02; awaiting decision	1. CPA encouraged inclusion of renewable and distributed generation, and workable contracting process. 2. Modest scale pilots authorized for small customers & and preliminary pricing programs pending for large customers; Phase 2 will address issues of meter ownership and financing. 3. CPA advocated for exclusion of DG from departing load charges, and waiver of fees acting as barriers to development. Approved 4/03. 4. CPUC inaction is contributing credit/security barrier to lending to private-sector end users.
CAISO/FERC Market Redesign	To track and understand the effects of market redesign on the availability and price of supply in California, and recommend or take action as appropriate.	CPA led the interagency working group during 2002 and early 2003.	This effort is ongoing. ISO is moving ahead with its market design changes as they are approved by FERC. The final design is still in flux and the implementation dates are uncertain.	CAISO adopted the request that capacity requirement component of MDO2 be left out of proposal to FERC until the State makes its own assessment on generation adequacy.

Appendix -- Summary of CPA 2002 Programs & Initiatives

CPA's 2002 POLICY INPUT ACTIVITIES (Continued)				
PROJECT	PURPOSE	SCOPE	STATUS	OUTCOME/ MILESTONES/ ISSUES
CEC Distributed Generation Strategy	Achieve coordinated strategy and timetable for development of DG in California	Presented comments & suggestions, reviewed draft reports.	CEC issued DG strategy document June 2002	CPA believes CEC research and analysis timetable should be accelerated.
CDWR/ Governor's Office/ Attorney General's Office Energy Contract Renegotiations	To assist the State with strategy, options, and financing aspects of contract renegotiations	Varied from limited input to extensive discussion on implementation plans.	Many contract re-negotiations completed; others may continue through first half of 2003.	Williams contract negotiations gave the State six LM 6000's to be passed on to cities for development and construction as peaker units, and up to \$69 million to the AG's Alternative Energy Retrofit Account for schools & public facilities.
Legislative proposals	To clarify statutory ambiguity regarding the CPA's activities in efficiency and renewables.		CPA is working with the Attorney General's office for further interpretation of its statute.	CPA will not pursue changes to its statute through the legislative process.